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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,317	12/20/2005	John Stark	P/1336-201	2795
2352 7590 07/16/2009 OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403				
EXAMINER				
WEINSTEIN, LEONARD J				
ART UNIT		PAPER NUMBER		
3746				
MAIL DATE		DELIVERY MODE		
07/16/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/561,317

Applicant(s)

STARK, JOHN

Examiner

LEONARD J. WEINSTEIN

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 and 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-893)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 1, 2009 has been entered.

2. The examiner acknowledges the amendment made to claim 9.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 9 rejected under 35 U.S.C. 102(b) as being anticipated by Work US 2,241,337. Work teaches all the limitations as claimed for a double-cone device of continuous geometry including: a first tapering section 25 having an interior space of hollow frustoconical shape, a second porous diverging section 29 having an interior space of hollow frustoconical shape, the first tapering section 25 and the second porous diverging section 29 meeting at a neck 28 at the smaller diameter end of the interior space of the first tapering section 25, the second porous diverging section 29 extending from the neck 28, to achieve suction, a third diverging section 26 having an

interior space of hollow frustroconical shape, extending from the larger diameter end of the interior space of the second porous section 29.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stark WO 01/16493 in view of Frenzl US 3,823,872. Stark teaches all the limitations as claimed for a double-cone device of continuous geometry including: a first tapering section 3 having an interior space 8 of hollow frustroconical shape, a second diverging section 22 having an interior space of hollow frustroconical shape, the first tapering section 3 and the second diverging section 22 meeting at a neck 19 (element 19 being an orifice located the junction between element 3 and element 22) at the smaller diameter end of the interior space 8 of the first tapering section 3, the second diverging section 22 extending from the neck 19, to achieve suction, a third diverging section 4 having an

interior space 9 of hollow frustroconical shape, extending from the larger diameter end of the interior space of the second section 22. Frenzl fails to teach the following limitations that are taught by Frenzl for a diverging section (18, 22) to be porous. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify a cone of Stark, by replacing an orifice forming a neck and a diverging section comprising a solid continuous in wall with porous diverging section, as taught by Frenzl, in order to eliminate or reduce a fluid boundary layer on the inner wall of the diverging section in series with a converging section of the double cone in order to increase a double cone's efficiency (Frenzl – col. 2 ll. 56-64).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Work US 2, 241,337. Work teaches all the limitations as discussed including a conical angle of a first tapering section 25 is greater than 0° , but Work does not explicitly teach a conical angle that is less than or equal to 10° . It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a first tapering section with a conical angle that is greater than 0° but less than or equal to 10° , since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Work US 2,241,337. Work teaches all the limitations as discussed including a conical angle of a third diverging section 26 is greater than 0° , but Work does not explicitly teach a

conical angle that is less than or equal to 10° . It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a third diverging section with a conical angle that is greater than 0° but less than or equal to 10° , since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Work US 2,241,337. Work teaches all the limitations as discussed including a second porous section 29 having an end with a larger diameter, the larger diameter being greater than a smaller diameter of the smaller diameter end of the first tapering section 25. Work does not explicitly teach that an end of a second porous section 29 has a diameter that is less than one and a half times larger than the smaller diameter end of a first tapering section 25. The smaller end of the first tapering section 25 of the double cone nozzle taught by Work transitions into the first end of a porous diverging section 29. The porous diverging section 29 has a second end with a larger diameter than a first end. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a larger diameter second end of a porous diverging section of a double cone nozzle to be less than one and a half times larger than a small diameter end of a first tapering section that transitions into the first end of the porous diverging section, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior

art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stark WO 01/16493 in view of Frenzl US 3,823,872, as applied to claim 9 above. A combination of Stark and Frenzl teaches all the limitations as discussed including, with reference to Stark, a conical angle of a first tapering section 3 is greater than 0° , but a combination does not explicitly teach a conical angle that is less than or equal to 10° . It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a first tapering section with a conical angle that is greater than 0° but less than or equal to 10° , since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stark WO 01/16493 in view of Frenzl US 3,823,872, as applied to claim 9 above. A combination of Stark and Frenzl teaches all the limitations as discussed including, with respect to Stark, a conical angle of a third diverging section 4 is greater than 0° , but a combination does not explicitly teach a conical angle that is less than or equal to 10° . It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a third diverging section with a conical angle that is greater than 0° but less than or equal to 10° , since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are

disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stark WO 01/16493 in view of Frenzl US 3,823,872, as applied to claim 9 above. A combination of Stark and Frenzl teaches all the limitations as discussed including, with respect to Stark, a second section 22 having an end with a larger diameter, the larger diameter being greater than a smaller diameter of the smaller diameter end of the first tapering section 3. A combination of the references does not explicitly teach that an end of a second section has a diameter that is less than one and a half times larger than the smaller diameter end of a first tapering section. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a larger diameter second end of a porous diverging section of a double cone nozzle to be less than one and a half times larger than a small diameter end of a first tapering section that transitions into the first end of the porous diverging section, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

14. Applicant's arguments with respect to claims 9-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are cited on form 892 herewith.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/Leonard J Weinstein/

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Examiner, Art Unit 3746